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DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS

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JACKSONVILLE DISTRICT LOCAL MASTER GUIDE SPECIFICATION

SECTION 01452

DREDGING/BEACH FILL PLACEMENT - CONTRACTOR QUALITY CONTROL 10/02

NOTE: This guide specification covers requirements
for Contractor Quality Control on all DREDGING/SHORE
PROTECTION/BEACH EROSION CONTROL PROJECTS..

Comments and suggestions are welcome. Using e-mail
for feedback is encouraged. Comments should be
directed to:

Engineering Division, Design Branch, Specifications
Section.

-- or --

Construction-Operations Division, Construction,
Quality Assurance Section POC Mr. Phill Bates
904-232-1196 (phillip.c.bates@saj02.usace.army.mil).

PART 1 GENERAL

1.1 DEFINITIONS

1.1.1 Project Manager/Superintendent

NOTE: Delete bracketed information if not
applicable.

Highest level manager located onsite and responsible for dredging,
disposal, [berm construction] and related activities, including but not
limited to the following, production, quality control, safety, turbidity
monitoring, endangered species monitoring and environmental protection.

1.1.2 Quality Control System Manager

A person assigned duties to manage Contractor's Quality Control (CQC) system. CQC System Manager shall have written delegated authority sufficient to stop work not in compliance with contract.

1.1.3 Safety Officer

Person assigned responsibility for site safety management.

1.1.4 Endangered Species Monitor

Person assigned for identifying regulatory protected wildlife and advising Contractor in modifying operations to protect identified species or damage to their habitat. Required to have acceptable qualifications and demonstrated ability. Refer to Section 01355 ENVIRONMENTAL PROTECTION.

1.2 REFERENCES

NOTE: Issue (date) of references included in project specifications need not be more current than provided by the latest change to this guide specification. During the reference reconciliation process, SPECSINTACT will automatically remove references from this paragraph that have been removed from the text. THEREFORE, IT IS NOT NECESSARY TO EDIT THIS PARAGRAPH, IT IS DONE AUTOMATICALLY.

The publication(s) listed below form(s) a part of this specification to the extent referenced. The publication(s) are referred to in the text by basic designation only.

U.S. ARMY CORPS OF ENGINEERS (USACE)

COE ER 1180-1-6 (1995) Construction Quality Management

Corps of Engineers publication(s) Internet location site is:
<http://www.usace.army.mil/inet/usace-docs/>.

1.3 SUBMITTALS

NOTE: Contracting Officer will request proposed submittals requiring Contracting Officer approval. Refer to Section 01330 SUBMITTAL PROCEDURES for Government office identifier designations. Information Only submittal CQC Plan to be reviewed jointly at Coordination Meeting specified in Section 01310 ADMINISTRATIVE PROCEDURES.

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. Submittals shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Quality Control Plan; G|COR

Refer to paragraph QUALITY CONTROL PLAN below.

Personnel Qualifications; G|COR

NOTE: DELETE REFERENCE(S) TO SURVEYOR/MAPPER IF NOT APPLICABLE.

Submit personnel qualifications for Project Manager/Superintendent, CQC System Manager, Safety Officer, Endangered Species Monitor, [Surveyor,] [Professional Surveyor and Mapper,] in resume form.

Letter of Authority

Letter to CQC System Manager signed by an authorized Contractor official which describes responsibilities and delegates sufficient authorities to perform functions of the CQC System Manager, including authority to stop work not in compliance with contract.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 GENERAL

The Contractor is responsible to plan and execute quality control in accordance with COE ER 1180-1-6 and establish and maintain an effective quality control system in compliance with the Clause INSPECTION OF CONSTRUCTION of Section 00700 CONTRACT CLAUSES. The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. Project Manager/Superintendent is responsible for quality of work and is subject to removal by the Contracting Officer for non-compliance with contract quality requirements. The Project Manager/Superintendent shall be on site at all times, except as otherwise approved by the Contracting Officer.

3.2 QUALITY CONTROL PLAN

3.2.1 General

NOTE: Select appropriate reference.

 Use 20 days after NOA as default time unless there is a longer mobilization period allowed.

 Use 30 days under an interim plan as default. When initial construction definable features of work are longer duration, consider allowing 45 - 60 day interim plan.

Within [20] [] calendar days of Notice of Award, submit a written CQC Plan for review by Contracting Officer. CQC Plan submittal will be reviewed by Contracting Officer and discussed in detail at a Coordination Meeting (see paragraph COORDINATION MEETING below). CQC Plan shall identify organization chart, personnel, procedures, control methods, instructions, tests, records, and forms to be used. Contracting Officer may accept an "interim CQC Plan" under a "conditional acceptance" for first [30] [] calendar days of operation. Contractor shall furnish, not later than [30] [] calendar days after commencement of work, an acceptable overall CQC Plan.

3.2.1.1 CQC Plan Resubmittal

No construction will be allowed to start until an "interim CQC Plan" is "conditionally accepted". When an "interim CQC Plan" is "conditionally accepted", revise and resubmit overall project CQC Plan for Contracting Officer's acceptance. When Contractor is working under an "interim CQC Plan", until Contractor submits an acceptable final CQC Plan, Contracting Officer may retain funds from progress payments in accordance with Clause PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS of Section 00700 CONTRACT CLAUSES. When no acceptable CQC Plan is resubmitted within a reasonable time, as determined by Contracting Officer, Contracting Officer may order Contractor to stop work until such time as a CQC Plan is accepted. Such a directed stop work order shall not be considered a suspension of work under Clause SUSPENSION OF WORK of Section 00700 CONTRACT CLAUSES. No pay or construction period adjustments will be allowed as a result of a directed stop work order based on Contractor inability to plan quality control in a manner acceptable to Contracting Officer.

3.2.1.2 Failure

Failure to comply with above requirements within time prescribed will be considered a condition endangering contract performance and may be considered grounds for termination of contract in accordance with Clause DEFAULT (FIXED-PRICE CONSTRUCTION) of Section 00700 CONTRACT CLAUSES.

3.2.2 Content of the CQC Plan

a. Describe Quality Control Organization: Include an organization chart with lines of authority and reporting. Project Manager/Superintendent may have dual roles as CQC System Manager or Safety Officer. See Section 01355 ENVIRONMENTAL PROTECTION for Endangered Species Monitor qualifications. [Beach placement quantity survey by Contractor requires qualified Registered Land Surveyor or Professional Surveyor and Mapper.]

NOTE: For above subparagraph, delete bracketed information if not applicable.

b. Definable Features of Work: Provide a list to be agreed upon during the Coordination Meeting.

c. Qualifications: Names, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function. If included, see paragraph LIMITATIONS ON SUBSTITUTIONS FOR CERTAIN POSITIONS AND/OR SUBCONTRACTORS of Section 00800 SPECIAL REQUIREMENTS.

d. Letter of Authority: Copy of letter of authority to CQC System Manager. The CQC System Manager shall issue letters of direction to other quality control staff describing duties, authorities, and responsibilities.

e. Submittal Control: Procedures for scheduling, reviewing, certifying, and managing submittals. These procedures shall be in accordance with Section 01330 SUBMITTAL PROCEDURES.

f. Testing: Control, verification, turbidity monitoring, and field testing procedures. Provide a list of specific instruments and tests. Provide information including work being tested, test frequency, and identify who (Contractor, Subcontractor) is responsible for each test. (Laboratory facilities will be approved by the Contracting Officer.)

g. Three Phase Control: Procedures to implement three phase quality control and inspection system. Procedures to plan and document preparatory, initial, and follow-up control phases.

h. Deficiency Tracking: Procedures for tracking construction deficiencies from identification through acceptable corrective action. Establish procedures to verify that deficiencies have been corrected and document correction.

i. Reports and Forms: Reporting procedures, including proposed reporting formats and sample forms.

3.2.3 Acceptance of Plan

"Conditional acceptance" of the Contractor's interim CQC Plan is required prior to starting dredging or other construction activities. Contracting Officer's acceptance is conditional and is contingent on satisfactory performance during construction. The Contracting Officer reserves the right to require the Contractor to make changes in his CQC Plan and construction operations, including removal of personnel.

3.2.4 Notification of Changes

Notify Contracting Officer in writing a minimum of 7 calendar days prior to proposed personnel or CQC Plan procedure changes. Proposed changes are subject to Contracting Officer acceptance.

3.3 COORDINATION MEETING

Refer to Section 01310 ADMINISTRATIVE PROCEDURES. Contracting Officer will schedule a Coordination Meeting where Contractor personnel and Contracting Officer personnel will develop a mutual understanding of how Contractor's Quality Control works with Contracting Officer's Quality Assurance. CQC Plan will be discussed in detail, including forms for recording CQC operations, control activities, testing, and administration of the system for both onsite and offsite work. Contractor quality control for production, measurement and payment, safety, turbidity monitoring, plant and equipment location, monitoring, endangered species monitoring, environmental protection and supervision by Quality Control personnel will be discussed. Meeting minutes will be prepared by Contracting Officer and signed by Contractor and Contracting Officer. The minutes become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address

deficiencies in the CQC system or procedures requiring corrective action.

3.4 QUALITY CONTROL ORGANIZATION

3.4.1 General

NOTE: Delete bracketed information if surveyor not required.

CQC organization shall have a CQC System Manager and sufficient number of additional qualified personnel to ensure contract quality control for workmanship and materials, including safety and environmental protection compliance. Designate Safety Officer and qualified Endangered Species Monitor who shall serve as a member of CQC staff. [Designate qualified surveyor for quantity measurement.] Provide office space, computer hardware and software, filing systems and other resources as necessary to maintain an effective CQC organization. CQC organization shall be responsible to maintain documentation and records onsite, unless approved by the Contracting Officer.

3.4.2 CQC System Manager

NOTE: The Lead Designer must evaluate the project to determine minimum level of education/experience CQC personnel require and select options accordingly. Specify minimum needed qualifications. For most Jacksonville District jobs, practical experience in type of work is more important than academic credentials.

Identify an individual, employed by Contractor, within onsite organization who shall be responsible for CQC management. CQC System Manager shall have authority to act in all CQC matters for the Contractor. CQC System Manager shall be an experienced dredging or construction person with a minimum of [3] [5] years in similar work. Identify an alternate person to serve as CQC System Manager during actual CQC System Manager's absences. Designated alternate shall be a construction person with a minimum three years experience on similar projects and shall meet CQM-C Training requirement below. CQC System Manager or a designated alternate shall be onsite during construction. CQC System Manager [shall be assigned no other duties.] [may have dual roles as Project Manager/Superintendent or Safety Officer, or if qualified, Surveyor or Endangered Species Monitor.]

3.4.3 CQM-C Training Requirement

CQC System Manager shall have completed U.S. Army Corps of Engineers (COE) course "Construction Quality Management For Contractors" within the previous five years. A completion certificate from any Corps District or Naval Facilities Command is acceptable. In event proposed CQC System Manager has not completed CQM-C training, he or she will have 60 days after Notice of Award to do so. This course is periodically offered by Jacksonville District. Information regarding CQM-C course can be obtained from the following web site:
<http://www.saj.usace.army.mil/conops/construction> or by contacting Chief, Quality Assurance Section at 904-232-1128.

3.4.4 Surveyor

NOTE: Use following paragraph in jobs where Contractor has measurement and payment responsibility, except Ocean Dredged Materials Disposal Site (ODMDS). Many Dredging Contractors subcontract survey to firms with Professional Surveyors and Mappers or Registered Land Surveyors registered in other States. Lead Designer Project Manager needs to determine from regulators, local sponsors when survey must be done by a firm registered in the Project State. DELETE IF NOT APPLICABLE; HOWEVER, SELECT APPROPRIATE REFERENCE IF USED.

Survey, topographic survey, and hydrographic survey shall be performed by persons working under direct supervision of a [Professional Surveyor and Mapper (PSM) registered in State of [Florida] [Georgia].] [or] [Registered Land Surveyor registered in [State of Georgia] [Commonwealth of Puerto Rico].] Perform pre- and post-construction survey for each acceptance section and provide supporting data to Contracting Officer. [PSM] [or] [RLS] shall certify field notes, computations, and other records relating to quantity survey.

3.4.5 Organizational Changes

When CQC staff changes are needed, revise CQC Organization Chart in CQC Plan to reflect changes and submit the changes to Contracting Officer for acceptance.

3.5 SUBMITTALS AND DELIVERABLES

Submittals shall be prepared and transmitted as specified in Section 01330 SUBMITTAL PROCEDURES. CQC organization shall certify submittals comply with contract requirements. Items delivered to Contracting Officer shall be controlled, packaged, transported and stored in a manner to prevent damage or loss.

3.6 CONTROL

Contractor's Quality Control is the means by which Contractor ensures construction, including that of subcontractors, complies with contract. Conduct Preparatory Phase and Initial Phase meetings for each definable feature of work (refer to Section 01310 ADMINISTRATIVE PROCEDURES). Perform three phases of control for each definable feature of work as follows:

3.6.1 Preparatory Phase

This phase shall be performed prior to beginning work on each definable feature of work. Notify Contracting Officer at least 24 hours in advance of beginning Preparatory Control Phase. Ensure proposed plans, activity hazard analyses, permits and submittals, are approved and copies are onsite. Conduct a Preparatory Phase meeting headed by CQC System Manager and attended by Superintendent, other CQC personnel, and foreman responsible for supervising workmanship for definable feature of work.

Document Preparatory Phase actions using "Preparatory Phase Checklist" and meeting minutes prepared by CQC System Manager. Preparatory Phase checklist is on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below. Attach checklist and minutes to Contractor's Quality Control (CQC) report (sample CQC form is on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below). Preparatory Phase actions include:

- a. Review each paragraph of specifications. Make copies available for use by Contracting Officers personnel and Contractor CQC staff at Preparatory Phase meeting. Maintain copies available until final acceptance of the work.
- b. Review of contract drawings.
- c. Check to assure that plant and/or equipment have been inspected, tested, submitted, and approved.
- d. Review provisions that have been made to provide required quality control inspection and testing.
- e. Examine work area to assure required preliminary work is complete and in compliance with contract.
- f. Review of activity hazard analysis to assure safety requirements are met.
- g. Discuss procedures for controlling quality of work. Document construction tolerances and workmanship standards for that feature of work.
- h. Check to ensure that portion of CQC Plan for new work to be performed has been accepted by Contracting Officer.
- i. Check that previous work or acceptance sections required to start new work have been completed.
- j. Review requirements under permits, environmental protection and protection of environmental species.
- k. Discuss initial control phase (workmanship).

3.6.2 Initial Phase

Notify Contracting Officer at least 24 hours in advance of beginning the Initial Phase. Initial Phase is workmanship oriented and shall be accomplished at beginning physical work on each acceptance section. Following shall be accomplished:

- a. Check preliminary work to ensure that complies with contract. Review minutes of preparatory meeting.
- b. Verify adequacy of turbidity monitoring, survey control to ensure contract compliance. Verify required inspection and testing.
- c. Establish level of workmanship and verify that it meets minimum acceptable contract workmanship standards and review allowable tolerances.

- d. Resolve all differences.
- e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review activity analysis with each worker.
- f. Initial phase shall be repeated for new crews working onsite and when contract workmanship quality standards are not being met.

3.6.3 Follow-up Phase

**NOTE: Select appropriate Section reference and/or
 fill in blank.**

Follow-up Phase consists of daily checks performed to quality control activities, including survey and testing, to provide continuous compliance with contract requirements. Record inspection and checking results in CQC documentation. Record both quality control activities, plant and equipment performance on Report of Operations. Report of Operations forms are on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below, and are also indicated in Section [02325 DREDGING.] [02391 BEACH FILL.] Complete follow-up checks and inspections and correct deficiencies prior to starting acceptance sections which may be affected by deficient work.

3.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on same definable features of work when: quality of on-going work is unacceptable; there are changes in applicable CQC staff, production supervision, or work crews; work on a definable feature is resumed after a period of inactivity; or, when other problems develop.

3.7 TESTS/TESTING PROCEDURE

Perform specified tests and required monitoring instrumentation or tests to verify control measures are adequate and provide an end product conforming to contract. When requested, Contractor shall furnish Contracting Officer duplicate samples of test specimens for possible testing by Contracting Officer. The Contractor shall perform following activities and record and provide the following data:

- a. Verify that testing standard or procedures comply with contract requirements.
- b. Verify that facilities, instruments, and testing equipment are available and comply with testing standards.
- c. Check test instrument calibration data against certified standards.
- d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.
- e. Results of tests and monitoring instruments, both passing and failing, shall be recorded and reported for date taken. If approved by Contracting Officer, actual test reports may be submitted later with a

reference to the test number and date taken. An information copy of tests performed by an offsite or commercial test facility shall be provided directly to the Contracting Officer. Failure to submit timely test reports or maintain adequate monitoring testing may result in nonpayment for related work performed.

3.8 COMPLETION INSPECTION

3.8.1 Post-Construction Measurement and Inspection

NOTE: Dredging or beach renourishment is basically a borrow pit or berm average-end-area quantity survey. Contracting Officer uses pre- and post-construction survey to obtain quantity measurement and plots post-construction final topography. Project planning question is "WHO will do survey--Contracting Officer or Contractor?"

Check with Project Manager or Lead Designer for 90% design review as to "who will perform payment quantity survey". Contractors usually perform quantity survey for each acceptance section. Contracting Officer has pre-bid decision to use Contractor's quantity measurement or conduct his own. Coordinate this paragraph with Clause QUANTITY SURVEY - ALTERNATE 1 of Section 00700 CONTRACT CLAUSES if used.

Near end of work on each acceptance section [notify Contracting Officer to] conduct post-construction survey and inspection to ensure contract conformance. [Contracting Officer reserves right to witness Contractor performed survey to conduct quality assurance or pay on Contracting Officer conducted survey.] Submit certified survey data and correct contract drawings to show as-built information. [Contractor shall spot check grading for berm for beach placement and confirm beach fill is within allowable tolerances.] Notify Contracting Officer to schedule a joint inspection of each acceptance section once deficiencies have been corrected.

3.8.2 Pre-Final Inspection

NOTE: Beach renourishment jobs have beach tilling and may have a separate completion date to establish sea oats or other dune vegetation. Edit brackets accordingly and ensure it is coordinated with Clause COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK of Section 00700 CONTRACT CLAUSES.

Near completion of project Contracting Officer and Contractor will conduct a Pre-Final Inspection. In addition to completion of quantity survey, Contracting Officer will inspect for demobilization of temporary facilities and clean-up of staging areas used to ensure contract conformance. [Contractor and Contracting Officer will inspect for final grading, tilling, and removal of escarpments.] Contracting Officer will perform Pre-Final Inspection to verify work is complete and ready for Owner acceptance. Contracting Officer Pre-Final Inspection may result in

additional work [such as beach tilling] to be done. Contractor's CQC System Manager shall ensure items are corrected before notifying Contracting Officer so that a Final Inspection with the Customer can be scheduled. Any items noted on Pre-Final Inspection shall be corrected in a timely manner. Pre-Final Inspection and deficiency corrections shall be accomplished within [project completion period.] [separate completion date for establishment of dune vegetation.]

3.8.3 Final Inspection

Final Inspection will be scheduled by Contracting Officer based upon results of Pre-Final Inspection. Notify Contracting Officer when ready for Final Inspection and Contracting Officer will schedule a Final Inspection with Owner or Sponsor to be performed within 14 working days. Provide assurance that work will be complete and acceptable by scheduled Final Inspection date. Contracting Officer will notify Owner or Sponsor to attend a Final Inspection. Contractor, Project Manager/Superintendent, and CQC System Manager shall attend the Final Inspection. In addition to Contracting Officer and Owner or Sponsor, persons from local government or other agencies may attend. Contractor's failure to have contract work completed for this inspection will be cause for Contracting Officer to bill the Contractor for Contracting Officer's additional inspection cost in accordance with the Clause INSPECTION OF CONSTRUCTION of Section 00700 CONTRACT CLAUSES.

3.9 DOCUMENTATION

NOTE: Edit brackets accordingly.

Maintain current records as required in Sections 01355 ENVIRONMENTAL PROTECTION, 01411 TURBIDITY AND DISPOSAL MONITORING, and 02325 DREDGING [02391 BEACH FILL]. Document quality control activities and tests have been performed using Daily Report of Dredge Operations and Daily Quality Control Reports.

3.10 NOTIFICATION OF COMPLIANCE

NOTE: Select appropriate reference.

Upon Contracting Officer's notification to Contractor of noncompliance with contract requirements, Contractor shall take immediate corrective action. Contractor personnel notified at work site is sufficient purpose of Contractor notification. If Contractor fails to comply within [1] [] calendar day[s], Contracting Officer may issue an order stopping all or part of work until satisfactory corrective action has been taken. Such stop orders shall not be made basis of Contractor claim for time extension or other damages to Contractor.

3.11 SAMPLE FORMS

The Contracting Officer's Representative will instruct the Contractor in the preparation of these forms during the Preconstruction Conference as specified in Section 01310 ADMINISTRATIVE PROCEDURES.

3.12 CONSTRUCTION FORMS AND DETAILS

From the Jacksonville District Home Page, click the links ORGANIZATIONS, ENGINEERING, then CONSTRUCTION FORMS AND DETAILS. See web site address www.saj.usace.army.mil/cadd/end/construction_forms_and_details.htm.

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